

Notice of Allowability

Application No.

09/921,333

Applicant(s)

SHIRATO ET AL.

Examiner

Art Unit

Juanita D. Stephens

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Oath of Declaration filed 8/27/2007.
2. ☒ The allowed claim(s) is/are 1-25.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/407,397.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. Claims 1-25 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach, suggest, or render obvious the combination of wherein each said pair of electrodes and each corresponding heat generating resistance member integrally form a U-shaped wiring member with a bent portion arranged with all of said bent portions facing the same direction, and cutting the base plate along a line substantially parallel to said line along which the plurality of heat generating resistance members are arranged at a location remote by a predetermined distance from each of the plurality of heat generating resistance members to form the substrate, the location for cutting determining a relative location between the plurality of heat generating resistance members and the plurality of discharge openings of the inkjet recording head to be produced using the substrate, recited in claims 1, 2, 4, and 5. This invention solves the problem of providing a compact ink jet recording head capable of high speed recording.

The prior art does not teach, suggest, or render obvious the combination of wherein each heat generating resistance member and corresponding selective and ground electrodes integrally form a U-shaped conductive path with each U-shaped conductive path facing the same direction, and each heat generating resistance member being a planar member having a longer side extending along the liquid passageway and a shorter side orthogonal to the liquid passageway, with the longer

side having a length at least two times as long as the length of the shorter side, and cutting the base plate along a line substantially parallel to said line along which the plurality of heat generating resistance members are arranged at a location remote by a predetermined distance from each of the plurality of heat generating resistance members to form the substrate, the location for cutting determining a relative location between the plurality of heat generating resistance members and the plurality of discharge openings of the inkjet recording head to be produced using the substrate, recited in claims 14, 15, 16, and 17. This invention solves the problem of providing a compact ink jet recording head capable of high speed recording.

The prior art does not teach, suggest, or render obvious the combination of wherein each heat generating resistance member and corresponding selective and ground electrodes integrally form a U-shaped conductive path with each U-shaped conductive path facing in the same direction, and each selective electrode, ground electrode and corresponding heat generating resistance member are laminated in at least two layer, and cutting the base plate along a line substantially parallel to said line along which the plurality of heat generating resistance members are arranged at a location remote by a predetermined distance from each of the plurality of heat generating resistance members to form the substrate, the location for cutting determining a relative location between the plurality of heat generating resistance members and the plurality of discharge openings of the inkjet recording head to be produced using the substrate, recited in claims 18, 19, 20, and 21. This invention

solves the problem of providing a compact ink jet recording head capable of high speed recording.

The prior art does not teach, suggest, or render obvious the combination of wherein each said pair of electrodes and each corresponding heat generating resistance member integrally form a U-shaped conductive path with a bent portion arranged with all of said bent portions facing the same direction, wherein each said pair of electrodes and each corresponding heat generating resistance member are laminated in layers, and cutting the base plate along a line substantially parallel to said line along which the plurality of heat generating resistance members are arranged at a location remote by a predetermined distance from each of the plurality of heat generating resistance members to form the substrate, the location for cutting determining a relative location between the plurality of heat generating resistance members and the plurality of discharge openings of the inkjet recording head to be produced using the substrate, recited in claims 22, 23, 24, and 25. This invention solves the problem of providing a compact ink jet recording head capable of high speed recording.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art of Endo et al. (US 4,723,129) discloses a known inkjet head, apparatus and method, but does not disclose of wherein each said pair of electrodes and each corresponding heat generating resistance member integrally form

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a U-shaped wiring member with a bent portion arranged with all of said bent portions facing the same direction, and cutting the base plate along a line substantially parallel to said line along which the plurality of heat generating resistance members are arranged at a location remote by a predetermined distance from each of the plurality of heat generating resistance members to form the substrate, the location for cutting determining a relative location between the plurality of heat generating resistance members and the plurality of discharge openings of the inkjet recording head to be produced using the substrate,

Contact Information

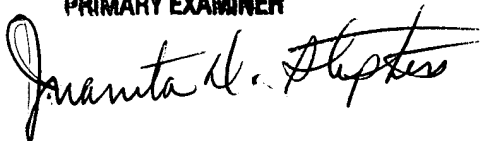
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juanita D. Stephens whose telephone number is (571) 272-2153. The examiner can normally be reached on Flex (Monday-Thursday 9:00 am -6:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JUANITA D. STEPHENS
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Juanita D. Stephens", written over a horizontal line.

Juanita D. Stephens
Primary Examiner
Art Unit 2853

/Juanita D. Stephens/
Primary Examiner, Art Unit 2853
March 24, 2008